

WHAT IS CLAIMED IS

1. In a system where containers are moved along a defined container path and contain bar codes that move along a bar code path parallel to said container path, and where the containers are to be detected and the bar codes are to be read, where the system includes a bar code reader that reads a  
5 detected bar code, a scanning laser beam source that directs a scanning laser beam at the bar code path, and a laser reflection sensor that detects reflections of the laser beam by producing sensor signals whose magnitude is largely proportionate to the intensity of detected light, where said sensor signals are delivered to said bar code reader, the improvement of apparatus for detecting  
10 each container, comprising:

a container detecting circuit having an input connected to said laser reflection sensor to receive said sensor signals, and which generates "box-detected" signals when it detects containers.

2. The system described in claim 1 wherein:

said container detecting circuit is constructed to generate a "box-detected" signal indicating detection of a container when the magnitude of the output from said laser reflection sensor increases from a low level representing  
5 no container to above a predetermined level which represents reflections from a container, with said container detecting circuit having a circuit part that ignores an increase in reflectance from a bar code space element that follows a brief decrease from an adjacent bar code line element.

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3. The system described in claim 1 including:

a data storage device that stores data representing the output of said laser reflection sensor;

5 said container detecting circuit is constructed to generate a signal indicating detection of a container after it detects an output from said laser reflection sensor that has a magnitude that increases from a low level representing no container to above a predetermined box-present level which represents reflections from a container, and with the magnitude remaining above said box-present level for at least a predetermined time representing  
10 container movement of a plurality of centimeters representing a container of minimum length, with any drops in magnitude lasting no more than a predetermined period representing bar code elements, being ignored.

4. A system for use with containers generally having bar codes, that move along a path, for detecting the containers as well as reading the bar codes, comprising:

5 a scanning laser source positioned to direct a scanning laser beam at said path;

a laser reflection sensor positioned to detect reflections of said scanning laser beam;

a bar code reader connected to said sensor to detect and read bar codes scanned by said laser beam;

10 container detecting means connected to said sensor to which said bar code reader is connected, for generating signals indicating detection of a container.

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5. A method for use with a system that includes a transport for moving containers with bar codes along a predetermined path, a scanning laser beam source that directs a scanning laser beam at the path of the bar codes, a laser reflection sensor that produces an electrical output representing the amplitude of reflected light, and a bar code reader connected to said sensor, where the method can detect the containers whether or not they have a bar code, comprising:

detecting an increase in magnitude of output from said laser reflection sensor, from a low magnitude representing noise when no container is present in the path of the laser beam, to at least a predetermined higher magnitude representing reflections from an unmarked surface of a container.